

Section C - Descriptions and Specifications

LOT 1 - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT**Item 0001, 0004, 0007, 0010, 0013**

1. The First Article AN/BRA-34 Mast Fairing to be delivered under the above shall be manufactured in accordance with NAVSEA Dwg. 128-4491143 Rev L (Assembly 9), Specification 962-101C, the Quality Assurance Requirements contained herein, and the following specification requirements.
2. The First Article AN/BRA-34 Mast Fairing Assembly shall be provided with the Hoist Cylinder Mounting Bracket (Dwg SS-522-4491146 Rev H, Assembly No.2), and Side Plates (Dwg 522-4491149 Rev R, Items 23 and 24), in the quantities as specified under said drawings, and shall be installed in accordance with NAVSEA S9585-AB-MMM-010/AN/BRA- 34 (Section 6.38 thru 6.38.15). The contractor shall provide the Identification Tag, as specified under Dwg.128-4491143, Item 23. and installed in accordance with said drawing.
3. The Hoist Cylinder Mounting Bracket (**minus piston rod locating pin**) and Side Plates, will be supplied as Government Furnished Material (GFM).
4. The First Article AN/BRA-34 Mast Fairing shall be painted with primer only, in accordance with SE110-BK-MMO-010 (Chapter 8). Micrometer readings for Port and Starboard, Forward and Aft bearing areas shall be provided by the contractor to DCMAO and NSWCCD representatives before the Primer Coat and after Primer Coat paint applications. These recordings shall be made a part of the contractor's Quality Evidence Data Sheets (OQEDS), listed under the Quality Assurance Requirements contained herein.
5. In addition, the contractor shall perform First Article Testing on the AN/BRA-34 Mast Fairing, in accordance with Specification 962-101C, Paragraph 4.4.1 thru 4.4.5. at the contractor's facility.
6. The AN/BRA-34 Mast Fairing under shall be delivered with an individual shipping crate, as specified under the section entitled "Packaging/ Marking", contained herein.

Item 0001AA, 0001AB, 0004AA, 0004AB, 0007AA, 0007AB, 0010AA, 0010AB, 0013AA, 0013AB

1. Each AN/BRA-34 Mast Fairing to be delivered above shall be manufactured in accordance with NAVSEA Dwg. 128-4491143 Rev L (Assembly 9), Specification 962-101C, the Quality Assurance Requirements contained herein, and the following specification requirements.
2. Each AN/BRA-34 Mast Fairing Assembly shall be provided with the Hoist Cylinder Mounting Bracket (Dwg SS-522-4491146 Rev H, Assembly No.2), and Side Plates (Dwg 522-4491149 Rev R, Items 23 and 24), in the quantities as specified under said drawings, and shall be installed in accordance with NAVSEA S9585-AB-MMM-010/AN/BRA- 34 (Section 6.38 thru 6.38.15). The contractor shall provide the Identification Tag, as specified under Dwg.128-4491143, Item 23. and installed in accordance with said drawing.
3. The Hoist Cylinder Mounting Bracket (**minus piston rod locating pin**) and Side Plates, will be supplied as Government Furnished Material (GFM).
4. Each AN/BRA-34 Mast Fairing shall be painted with primer only, in accordance with SE110-BK-MMO-010 (Chapter 8). Micrometer readings for Port and Starboard, Forward and Aft bearing areas shall be provided by the

contractor to DCMAO and NSWCCD representatives before the Primer Coat and after Primer Coat paint applications. These recordings shall be made a part of the contractor's Quality Evidence Data Sheets (OQEDS), listed under the Quality Assurance Requirements contained herein.

5. Each AN/BRA-34 Mast Fairing shall be delivered with an individual shipping crate, as specified under the section entitled "Packaging/ Marking", contained herein.

Item 0002, 0005, 0008, 0011, 0014

1. The First Article AN/BRD-7 (688 CL) Mast Fairing Assembly to be provided under the above shall be manufactured in accordance with NAVSEA Dwg.128-4491143 Rev K (Assembly 8), Specification 962-101C, the Quality Assurance Requirements contained herein, and the following specification requirements.

2. The First Article AN/BRD-7 (688 CL) Mast Fairing shall be provided with a Hoist Cylinder Mounting Bracket (Dwg.522-4491146 Rev H, Assembly No.2), and Side Plates (Dwg. 522-4491149 Rev R, Items 23 and 24), in the quantities as specified under said drawings, and shall be installed in accordance with NAVSEA S9585-AC-MMM-010/AN/BRA-34 (Section 6.38 thru 6.38.15). The contractor shall provide the Identification Tag, as specified under Dwg. 128-4491143, Item 23, and installed in accordance with said drawing.

3. The Hoist Cylinder Mounting Bracket (**minus piston rod locating pin**) and Side Plates will be supplied as GFM.

4. The First Article AN/BRD-7 Mast Fairing shall be painted with primer only, in accordance with SE110-BK-MMO-010 (Chapter 8). Micrometer readings for Port and Starboard, Forward and Aft bearing areas, shall be provided by the contractor to DCMAO and NSWCCD representatives before the Primer Coat and after Primer Coat paint applications. These recordings shall be made a part of the contractor's Objective Quality Evidence Data Sheets (OQEDS), listed under the Quality Assurance Requirements contained herein.

5. In addition, the contractor shall perform First Article Testing on the AN/BRD-7 Mast Fairing, in accordance with Specification 962-101C, Paragraph 4.4.1 thru 4.4.5. at the contractor's facility.

6. The AN/BRD-7 Mast Fairing shall be delivered with an individual shipping crate, as specified under the section entitled "Packaging / Marking", contained herein.

Item 0002AA, 0002AB, 0005AA, 0005AB, 0008AA, 0008AB, 0011AA, 0011AB, 0014AA, 0014AB

1. Each AN/BRD-7 (688 CL) Mast Fairing Assembly to be provided above shall be manufactured in accordance with NAVSEA Dwg.128-4491143 Rev K (Assembly 8), Specification 962-101C the Quality Assurance Requirements contained herein, and the following specification requirements.

2. Each AN/BRD-7 (688 CL) Mast Fairing shall be provided with a Hoist Cylinder Mounting Bracket (Dwg.522-4491146 Rev H, Assembly No.2), and Side Plates (Dwg. 522-4491149 Rev R, Items 23 and 24), in the quantities as specified under said drawings, and shall be installed in accordance with NAVSEA S9585-AC-MMM-010/AN/BRA-34 (Section 6.38 thru 6.38.15). The contractor shall provide the Identification Tag, as specified under Dwg. 128-4491143, Item 23, and installed in accordance with said drawing.

3. The Hoist Cylinder Mounting Bracket (**minus piston rod locating pin**) and Side Plates will be supplied as GFM.

4. Each AN/BRD-7 Mast Fairing shall be painted with primer only, in accordance with SE110-BK-MMO-010 (Chapter 8). Micrometer readings for Port and Starboard, Forward and Aft bearing areas, shall be provided by the contractor to DCMAO and NSWCCD representatives before the Primer Coat and after Primer Coat paint applications. These recordings shall be made a part of the contractor's Objective Quality Evidence Data Sheets (OQEDS), listed under the Quality Assurance Requirements contained herein.

5. Each AN/BRD-7 Mast Fairing shall be delivered with an individual shipping crate, as specified under the section entitled "Packaging / Marking", contained herein.

SPECIAL NOTES

(1) Under Dwg 128-4491143, Rev L (AN/BRA-34 & AN/BRD-7 Masts), the baseline dimension of the internal bearing area shall be 14.790 +/- .010" and shall not exceed .010" variance throughout the entire length of the antenna fairing.

(2) Under CDNSWC Specification 962-101 (Critical Item Product Specification for Antenna Faired Mast), the Mechanical and Physical Properties and Test Requirements cited in Table 1 and Table 3 shall be as follows:

(a) The Modulus of Elasticity (Flexural Modulus) for both the faired mast shells and center sections shall be 4.0 x 10(6) psi.

(b) The void content for both the faired mast shell and center sections shall be 3%.

(3) The Government reserves the right to conduct a bend test on any Mast Fairing Assembly produced under this contract. The bend test shall be conducted in accordance with Specification 962-101C and shall be performed by the contractor at their facility. The Government will give the contractor at least thirty (30) days notice prior to the requirement to perform a bend test on any Mast Fairing under this contract.

Item 0003, 0006, 0009, 0012, 0015

Technical Data under Item 0003 shall be as specified under the DD Form 1423, enclosed herein as Exhibit A.

LOT 1 - QUALITY ASSURANCE REQUIREMENTS

1. Contractor's Quality/Inspection System:

- a. The contractor shall provide and maintain a written inspection system, which will assure that all supplies and services submitted to the Government for acceptance conform to contract requirements whether manufactured or processed by the contractor, or procured from subcontractors or vendors. The contractor shall perform or have performed the inspections and tests required to substantiate product conformance to drawing, specifications and contract requirements and shall also perform or

have performed all inspections and tests otherwise required by the contract. The contractor's inspection system shall be documented and shall be available for review by the Naval Surface Warfare Center Carderock Division – Philadelphia Site, Naval Business Center, 4700 S. Broad Street, Phila., PA 19112-5083, Attn. Code 9613, via the DCMC, fifteen (15) days after award of contract and throughout the life of the contract. The contractor shall notify the Naval Surface Warfare Center Carderock Division – Philadelphia Site in writing of any change to the inspection system. The inspection system shall be subject to disapproval if changes thereto would result in nonconforming product. Vendors currently operating under ANSI/ISO/ASQ Q9001-2000 or MIL-I-45208 quality system will be deemed acceptable under this provision.

b. The Quality/Inspection System shall include the following:

- 1) Document Control
- 2) Purchasing
- 3) Control of Customer Supplied Material (Government Furnished Material)
- 4) Product Identification and Traceability
- 5) Process Control
- 6) Inspection and Testing
- 7) Inspection Measuring and Test Equipment Calibration in accordance with the requirements of ANSI/NCSS Z540-1.
- 8) Inspection and Test Status
- 9) Control of Nonconforming Product
- 10) Corrective Action
- 11) Handling, Storage, Packaging, and Delivery
- 12) Records
- 13) Controls to assure that requirements of this contract are invoked on subcontractors and the contractor verifies implementation by subcontractors.

2. Procedures:

a. The contractor shall furnish the following procedures:

- 14) An inspection plan. This document shall contain as a minimum:
 - a) Step-by-step method with inspection/verification points.
 - (1) Part Name.
 - (2) Identification of each characteristic to be inspected.
 - (3) Acceptance and reject criteria.
 - (4) Actual dimension recordings.
- 15) Straightness test procedure, and/or optical alignment procedure. The procedure shall contain as a minimum:
 - a) Straightness Requirements.
 - b) Alignment Requirements.
 - c) Equipment List.
 - d) Step-by-step Method.
 - e) Set up.
 - f) Method of Obtaining Readings.
 - g) Reading Locations on the Unit.
 - h) Recording of Test Results.

- 16) First Article/Production bend test procedure (as necessary). The procedure shall contain as a minimum:
 - a) Test Requirements.
 - b) Equipment List.
 - c) Step by Step Method.
 - d) Set-Up
 - e) Post Test Inspection Criteria.
 - f) Post Test Inspection Results.
- 17) Wall Thickness measurement procedure. The procedure shall contain as a minimum:
 - a) Wall Thickness Requirements.
 - b) Equipment List.
 - c) Step by Step Method.
 - d) Set-Up
 - e) Location of Readings.
 - f) Recording test results and converting the results into a total readout graph and thickness chart.

3. Records:

- a. For each assembly, component, delivered item, the supplier shall furnish one (1) copy of the following documents correlated to the contract number and serial number assigned to the assembly:
 - 18) For Government-Furnished Material:
 - a) Certification that material furnished was used in the assembly it was supplied for
 - b) Document list of all material used in such furnished assembly. For each piece, the list shall include the drawing number, piece number, and component serial letter.
 - 19) For Contractor-Furnished Raw Material:
 - a) For contractor-supplied material, the contractor shall supply documented verification of raw material by alloy families using simple, direct and rapid analysis methods or a combination of methods (e.g., visual, hardness test, magnetic properties test, acid spot tests, and metal comparator tests).
 - b) For the UHMW polyethylene material the contractor shall provide:
 - (1) A Certificate of Compliance attesting that the material is homogeneous, free of streaks, defect free, and stress relieved.
 - 20) Copies of test reports showing the results of:
 - a) Optical Alignment
 - b) Straightness Inspection
 - c) Wall Thickness Inspection
 - d) Tests Coupon Testing
 - e) Insert pullout test under Drawing SS-128-4491148 and SPI #3059. This test is to be accomplished prior to installation of piece 28.

- 21) The inspection records shall show the results of every dimension inspected and shall include the inspector's signature and date. The inspection records are to be maintained on Objective Quality Evidence Data Sheets (OQEDS) supplied by the contractor. Recording the results of dimensional inspections on a configuration facsimile of the component as shown on the applicable drawing is an acceptable OQED.
- a) ACTUAL measurements are required for the following characteristic:
 - (1) Dimensions with a tolerance of +/- .005 or less"
 - (2) Straightness of .010" per foot or less
 - (3) Geometric characteristics (forms, profile, orientation, location, run out, etc.) with a tolerance of .010" or less
 - (4) Finishes 32 or less.
 - (5) Angles +/- 1/2 degree or less
 - (6) Torque Records
 - b) Class 2 Threads shall be inspected in accordance with ASME B1.3, System 21 requirements and Class 3 threads or higher shall be inspected in accordance with ASME B1.3, System 22 requirements.
 - c) All of the supplied documents shall have complete traceability to the hardware for inspection purposes. Therefore, whenever applicable, records shall show: contract number, name of contractor, plan number, revision letter, piece number, serial letter/number of finished piece, and item nomenclature.
 - d) Documented list of all material used in each finished and delivered assembly. A qualification summary sheet that will summarize and correlate all of the Objective Quality Evidence to support product quality. The contractor will supply certifications summary sheet blanks, used by the contractor.
 - e) Records for each assembly, component, delivered item shall identify the inspection, measuring, test equipment, calibration dates and calibration due dates for inspection, measuring, and test equipment used during verifications, inspections, and/or tests.
 - f) Inspection Forms: Contractor shall utilize the following inspection forms for reporting test data:
 - (1) NSWCCD Form 104-17-016, Mast Fairing Dimensional Straightness Measurement.
 - (2) NSWCCD Form 104-15-032, Auto Reflection for Piston Rod Brackets and Cylinder Bearings
 - (3) NSWCCD Form 104-17-029, Inner Mast Dimensional and Straightness Measurements
 - (4) NSWCCD Form 104-17-030, Mast Sigma Channel and Aft Internal Bearing Straightness
 - (5) NAVSHIPS 4646
 - (6) NAVSHIPS 4647
4. Control of Government Furnished Material (GFM):
- a. Material received from NSWCCD Philadelphia will be received accompanied by NSWCCD Philadelphia Material Control Form 154-04-036.

- b. NSWCCD Philadelphia will be responsible for providing Material Control form with the material.
 - c. Upon receipt of material, contractor will inventory material and return two (2) copies of the completed form to NSWCCD Philadelphia, Code 9633.
 - d. A complete inspection report of visual and dimensional inspections of the GFM conducted by the contractor shall be forwarded to NSWCCD-9613 prior to using the GFM.
 - e. Material traceability must be maintained at all times from material to the Material Control Form.
 - f. Excess material or spoilage is to be returned to the government.
 - g. Government-Furnished Equipment shall be returned in good and usable condition. If repairs are required, the cost of repairs shall be charged to the contractor.
5. Mercury Exclusion Clause:
- a. Mercury Contamination: The supplies furnished under this contract shall contain no metallic or mercury compounds and shall be free from mercury contamination (i.e., during the manufacturing process, testing, or inspecting) i.a.w. NAVSEAINST 5100.3D. The supplies offered shall not have come in direct contact with mercury or any of its compounds nor with any mercury-containing device employing only a single boundary of containment. (A single boundary of containment is one, which is not backed by a seal or barrier.) Mercury contamination of the supplies will be cause for rejection of the material.
 - b. If there is reasonable cause to suspect the supplies of being contaminated by mercury, the following test may be used to determine whether contamination by metallic mercury exists: Enclose the equipment in a polyethylene bag or close-fitting airtight container and place in an oven at 135 degrees F +5 degrees F for one hour. Sample the trapped air and if mercury vapor concentration is 0.0 mg/cu meter or more, the material is mercury contaminated insofar as the requirements of this contract are concerned. Mercury vapor concentration can be determined with a mercury vapor detector such as a portable General Electric Vapor Detector (Catalog No. 8257557G-3), Bechman Instrument Model K-23, or other instruments that have equivalent range and capabilities. It should be noted that certain vapors such as benzene interfere with this type of mercury vapor detector and the detector should never be zero adjusted in any suspect atmosphere.
 - c. If the inclusion of metallic mercury or mercury compounds is required as a functional part of the material furnished under this contract, the contractor shall obtain written approval from NAVSEA before proceeding with manufacture. The contractor's request shall explain in detail the requirement for mercury, identify specifically the parts to contain mercury, and explain the method of protection against mercury escape. Such a request will be forwarded to the Government Inspector or Government Representative with a copy to NAVSEA. Upon approval by NAVSEA, the vendor will provide a warning plate as prescribed by enclosure (2) of NAVSHIPSINST 5100.28 which will include a statement that mercury is a functional part of the item and also the name and location of that part.
 - d. If and to the extent that this contract calls for work to be performed by the contractor on a submarine, the contractor, in connection with such work, shall not bring into or utilize in the submarine any instrument or other device containing metallic mercury or mercury compounds, unless such equipment, instrument, or device has been approved by the Naval Sea Systems Command or authorized representative for use on a submarine.
 - e. The contractor is required to certify via a certificate of compliance that:

- 22) The supplies furnished under this contract contain no metallic mercury or mercury compounds.
- 23) The contractor has taken responsible steps to ensure that the supplies furnished under this contract are not contaminated with metallic mercury or mercury compounds.
- f. The requirements of this clause shall be included in all subcontracts hereunder. Technical question pertaining to the requirements of this clause shall be referred to NAVSEA via the Government Inspection or Representative.

LOT 1 - GOVERNMENT FURNISHED MATERIAL

1. Each delivery order issued under this contract shall specify the Government Furnished Material the Government shall furnish to the contractor for use in connection with the contract the material set forth below:
 - a. Only material listed below in the quantity shown will be furnished by the Government and will be available as specified herein after award of contract. Pick-up of Government Furnished Material by contractor shall be at Bldg. 1000, 5101 S. 18th Street, Philadelphia Naval Business Center, Philadelphia, Pa. 19112, or at place otherwise designated. Such material shall be subject to the clause of this contract entitled "Government Furnished Property". All other material required in the performance of this contract shall be furnished by the contractor.
 - b. Contractor must notify the contracting officer within 24 hours after picking up the Government Furnished Material that it has been received and no shortages exist. In the event of shortages, an itemized list must be submitted within the 24 hour period.
2. Control of Government Furnished Material:
 - a. Material from CDNSWC will be received accompanied by CDNSWC Material Control Form 154-04-36.
 - b. CDNSWC will be responsible for completing Material Control Form upon issue of the material.
 - c. Upon receipt of material, contractor will inventory material and return two (2) copies of the completed form to CDNSWC, Code 9634.
3. Material traceability must be maintained at all times by matching markings on material to markings indicated on CDNSWC Material Control Form.
4. Material that is in excess of the quantity required to complete a work request or the result of spoilage is to be returned to CDNSWC.
5. Government Furnished equipment shall be returned to CDNSWC in good and useable condition. If repairs are required, the cost of repairs shall be charged to the contractor.
6. It is anticipated that GFM will be provided under each delivery order, as follows; however, each order will specify the actual GFM to be provided:

<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>VALUE EACH</u>	<u>Days AFTER AWARD</u>
AN/BRA-34 (688 CL) Hoist Cylinder Mounting Bracket, Assembly No. 2 Dwg. 522-4491146 Rev H (minus locating pin)	2 ea.	\$4,500.00	15
AN/BRA-34 (688 CL) Side Plates Dwg. 522-4491149 Rev R	2 Sets	\$1,000.00	30
AN/BRD-7 Hoist Cylinder Mounting Bracket, Assembly No. 2 Dwg. 522-4491146 Rev H (minus locating pin)	2 ea.	\$4,500.00	15
AN/BRD-7 Side Plates Dwg. 522-4491149 Rev R	2 Sets	\$1,000.00	30

LOT 2 - DESCRIPTION/ SPECIFICATIONS

1. The contractor shall provide the repair / refurbishment, rebuilding, assembling, and modification of Government Furnished fiberglass composite structures. There may be cases where the repaired structure requires hydrostatic testing. The fiberglass structures will consist of, but will not be limited to, submarine antenna and periscope mast fairings, radomes, antenna closure caps, etc. Work to be performed by the contractor will be identified under individual delivery orders issued by a Contracting / Ordering Officer, within the Naval Surface Warfare Center, Carderock Division, Ship Systems Engineering Station (NSWCCD).
2. The contractor will be reimbursed under the respective Contract Line Item Numbers for direct charges associated with the performance of individual delivery orders, issued hereunder.
3. The contractor will be required to submit a monthly status report in accordance with data item A004 of the attached DD Form 1423.
4. The following are a sampling of the typical drawings and specifications in conjunction with the above:

Drawing 4491143 (Various Mast Fairing Assemblies)
Drawing 4491223 (Radar Camouflage Units For the Type 18 Periscope)
Drawing 9000501 (Trident Faired Mast Assembly)
Drawing 6744237 (SSN 688 Class No.2 Periscope Fairing Assembly)

NAVSEA SE110-BK-MMO-010 (Procedures for Inspection, Repairs and Painting of
Fiberglass Mast Assemblies)

CDNSWC SPECIFICATION NO. 962-101C (Critical Item Product Fabrication Specification for Faired Mast)

NAVSEA 0900-LP-016-9025 (Procedure for Repair and Painting of Radar Camouflage Units Components)

5. **Personnel Requirements:** The following are the Government's minimum personnel requirements for the type of personnel to perform under the requirements listed under paragraph 1., above. The contractor shall be responsible for assigning appropriate technically qualified personnel, in addition to possessing and maintaining the necessary organization and administrative control to perform the tasks outlined herein and as assigned under any resulting delivery order. If during the performance of any resulting delivery order, the Contracting Officer questions that the contractor is using personnel other than those with the minimum qualifications set forth below, the burden of proof shall be on the contractor to substantiate that such personnel do possess said qualifications and experience.

Any personnel handling classified raw material, example drawing 4491223 or reviewing classified specifications shall be certified in accordance with DOD procedures and attached DD Form 254.

a. Engineer:

The engineer shall have a Bachelor of Science degree in Engineering from an accredited college or university and at least two (2) years in the practice of his / her specialty. Also, four (4) years of demonstrated experience in glass-reinforced plastics, along with at least (2) years of specialized experience in the design, manufacture, operation, maintenance and testing of submarine antenna or periscope fiberglass faired masts.

- OR -

The engineer shall have a Bachelor of Science degree in a Physical Science (Chemistry, Physics, or Material Science) from an accredited college or university. Also, two (2) years of demonstrated experience in glass-reinforced plastics, along with two (2) years experience in engineering.

b. Supervisor:

Seven (7) years experience in a glass-reinforced composite / fiberglass environment, encompassing shop manufacturing, maintenance and repair practices, and the ability to interpret blueprints, technical manuals, documents and work specifications. Also, two (2) years which have been at the supervisory level. An apprenticeship in a glass-reinforced composite / fiberglass industry trade shall be considered four (4) years of experience.

c. Journeyman Mechanic:

Six (6) years experience in a glass-reinforced composite / fiberglass environment, encompassing shop manufacturing (including machining), maintenance and repair practices, and the ability to interpret blueprints, technical manuals, documents and work specifications. An apprenticeship in a glass-reinforced composite / fiberglass trade shall be considered four (4) years of experience.

d. Helper:

Two years experience in a general trade, and the ability to assist journeyman mechanics in the execution of their duties in a glass-reinforced composite / fiberglass environment.

e. Quality Inspector:

Ability to read, interpret and apply technical data such as blueprints, engineering drawings, product specifications, technical manuals, and contract statements of work. Able to verify by test or inspection, using sampling inspection or intensive product inspection techniques, that products comply with specification requirements.

f. Packager/Shipper:

The packager/shipper shall be able to meet the requirements contained under the Packaging / Marking section contained, herein.

6. Contract Reimbursable Costs

a. Item 0018 - Material

During the course of this contract, the contractor may be required to furnish materials associated with the performance of repairing / refurbishing, rebuilding and / or modification to Government Furnished fiberglass structures, issued by the Ordering Officer. As such, the contractor will be reimbursed at the actual cost, with any material-handling fee as agreed to by the Contracting Officer.

b. Item 0019 - Transportation

The contractor's costs for pick-up/delivery of items in conjunction with the tasks performed under authorized delivery orders shall be reimbursed to destination, under Item 0006AB.

c. Item 0020 – Specialized Subcontracting

During the course of the contract, the contractor may require the services of a sub-contractor to provide specialized services, in support of defined tasks under authorized delivery orders. Such services will be reimbursed under Item 0006AC.

d. Item 0021 – Technical Data

The technical data to be delivered shall be furnished as required by DD Form 1423 (Exhibit A) . Technical Data under this contract shall include a CONTRACTOR STATUS REPORT, which shall consist of current status of all delivery orders, issued hereunder, as per DD1423 (Exhibit A).

7. Facilities and Equipment:

Due to the necessity of technical / quality assurance monitoring required in conjunction with the repair / refurbishment, rebuilding and modification of submarine antenna and periscope fairings, it is critical that the contractor possess a facility within 350 miles from NSWCCD, Philadelphia, Pa. This facility must possess a manufacturing / fabrication facility, conducive to repairing, rebuilding and modifying the fiberglass / glass composite structures, as outlined under paragraph 1., above. In addition, the contractor must have available the following equipment and tooling necessary for performance under this contract:

- a. MOLDS: Molds for the various sections (e.g. forward / aft) of a mast fairing are required, since it may be necessary to salvage a mast from beyond useable condition, by manufacturing a complete section of the mast.
- b. 50 Ft. PLANER MILLER: Will be required in order to machine mast fairing bearing surfaces to the required specifications.
- c. Optical Alignment Equipment (scope and fixtures)
- d. Surface Plate for Mast Fairing Straightness

- e. Paint Booth: Meeting the requirements of NAVSEA SE110-BK-MMO-010, with the capacity to paint a 23ft long mast.
- f. Storage Area: A storage area to accommodate classified material, which meets the requirements of DD Form 254.

LOT 2 - QUALITY ASSURANCE REQUIREMENTS:

1. Contractor's Quality/Inspection System:

- a. The contractor shall provide and maintain a written inspection system, which will assure that all supplies and services submitted to the Government for acceptance conform to contract requirements whether manufactured or processed by the contractor, or procured from subcontractors or vendors. The contractor shall perform or have performed the inspections and tests required to substantiate product conformance to drawing, specifications and contract requirements and shall also perform or have performed all inspections and tests otherwise required by the contract. The contractor's inspection system shall be documented and shall be available for review by the Naval Surface Warfare Center Carderock Division – Philadelphia Site, Naval Business Center, 4700 S. Broad Street, Phila., PA 19112-5083, Attn. Code 9613, via the DCMC, thirty (30) days after award of contract and throughout the life of the contract. The contractor shall notify the Naval Surface Warfare Center Carderock Division – Philadelphia Site in writing of any change to the inspection system. The inspection system shall be subject to disapproval if changes thereto would result in nonconforming product. Vendors currently operating under ANSI/ISO/ASQ Q9001-2000 and NSTS 9090-310C or MIL-I-45208 quality system will be deemed acceptable under this provision.
- b. The Quality/Inspection System shall include the following:
 - 1) Document Control
 - 2) Purchasing
 - 3) Control of Customer Supplied Material (Government Furnished Material)
 - 4) Product Identification and Traceability
 - 5) Process Control
 - 6) Inspection and Testing
 - 7) Inspection Measuring and Test Equipment Calibration in accordance with the requirements of ANSI/NCSL Z540-1.
 - 8) Inspection and Test Status
 - 9) Control of Nonconforming Product
 - 10) Corrective Action
 - 11) Handling, Storage, Packaging, and Delivery
 - 12) Records
 - 13) Control of Classified Material
 - 14) Controls to assure that requirements of this contract are invoked on subcontractors and the contractor verifies implementation by subcontractors.
 - 15) Special Requirements identified in Delivery Orders.

2. Procedures:

- a. The contractor shall furnish the following procedures:
 - 1) An inspection plan. This document shall contain as a minimum:

- a) Step-by-step method with inspection/verification points.
 - (1) Part Name.
 - (2) Identification of each characteristic to be inspected.
 - (3) Acceptance and reject criteria.
 - (4) Actual dimension recordings.
- 2) Straightness test procedure, and/or optical alignment procedure. The procedure shall contain as a minimum:
 - a) Straightness Requirements.
 - b) Alignment Requirements.
 - c) Equipment List.
 - d) Step-by-step Method.
 - e) Set up.
 - f) Method of Obtaining Readings.
 - g) Reading Locations on the Unit.
 - h) Recording of Test Results.
- 3) First Production/Production bend test procedure (as necessary). The procedure shall contain as a minimum:
 - a) Test Requirements.
 - b) Equipment List.
 - c) Step by Step Method.
 - d) Set-Up
 - e) Post Test Inspection Criteria.
 - f) Post Test Inspection Results.
- 4) Wall Thickness measurement procedure. The procedure shall contain as a minimum:
 - a) Wall Thickness Requirements.
 - b) Equipment List.
 - c) Step by Step Method.
 - d) Set-Up
 - e) Location of Readings.
 - f) Recording test results and converting the results into a total readout graph and thickness chart.
- 5) Hydrostatic Test Procedure.
 - a) Test Requirements.
 - b) Set up of Unit in Test Stand.
 - c) Applied Loads.
 - d) Step-by-step Method.
 - e) Applied Cycle.
 - f) Recording of Test Results.
 - g) Time Periods for Cycling.
 - h) Cycle Test Performance Procedure
 - i) Electrical Tests.
- 6) Flexure Test Procedure as required by Drawing and/or other Specification.
- 7) Special Requirements identified in Delivery Orders.

3. Records:

- a. For each assembly, component, delivered item, the supplier shall furnish one (1) copy of the following documents correlated to the contract number and serial number assigned to the assembly:
 - 1) For Government-Furnished Material:
 - a) Certification that material furnished was used in the assembly it was supplied for
 - b) Document list of all material used in such furnished assembly. For each piece, the list shall include the drawing number, piece number, and component serial letter.
 - 2) For Contractor-Furnished Raw Material:
 - a) For contractor-supplied material, the contractor shall supply documented verification of raw material by alloy families using simple, direct and rapid analysis methods or a combination of methods (e.g., visual, hardness test, magnetic properties test, acid spot tests, and metal comparator tests).
 - 3) Copies of test reports showing the results of:
 - a) Hydrostatic Pressure Testing.
 - b) Optical Alignment
 - c) Straightness Inspection
 - d) Wall Thickness Inspection
 - e) Tests Coupon Testing
 - f) Insert pullout test under Drawing 28528-1362435. This test is to be accomplished prior to installation of piece 1.
 - g) Insert pullout test under Drawing SS-128-4491148 and SPI #3059. This test is to be accomplished prior to installation of piece 28.
 - 4) The inspection records shall show the results of every dimension inspected and shall include the inspector's signature and date. The inspection records are to be maintained on Objective Quality Evidence Data Sheets (OQEDS) supplied by the contractor. Recording the results of dimensional inspections on a configuration facsimile of the component as shown on the applicable drawing is an acceptable OQED.
 - a) ACTUAL measurements are required for the following characteristic:
 - (1) Dimensions with a tolerance of +/- .005 or less"
 - (2) Straightness of .010" per foot or less
 - (3) Geometric characteristics (forms, profile, orientation, location, run out, etc.) with a tolerance of .010" or less
 - (4) Finishes 32 or less.
 - (5) Angles +/- 1/2 degree or less
 - (6) Torque Records
 - b) Class 2 Threads shall be inspected in accordance with ASME B1.3, System 21 requirements and Class 3 threads or higher shall be inspected in accordance with ASME B1.3, System 22 requirements.

- c) Sampling inspection is permitted under this contract. A sampling plan identifying the parts and the sample size must be submitted to NSWCCD-Phila code 9613 for approval prior to completion of inspection.
- d) Electrical test reports as required by Drawing or Specification.
- e) All of the supplied documents shall have complete traceability to the hardware for inspection purposes. Therefore, whenever applicable, records shall show: contract number, name of contractor, plan number, revision letter, piece number, serial letter/number of finished piece, item nomenclature, and material degree of control.
- f) Documented list of all material used in each finished and delivered assembly. A qualification summary sheet that will summarize and correlate all of the Objective Quality Evidence to support product quality. The contractor will supply certifications summary sheet blanks, used by the contractor.
- g) Records for each assembly, component, delivered item shall identify the inspection, measuring, test equipment, calibration dates and calibration due dates for inspection, measuring, and test equipment used during verifications, inspections, and/or tests.
- h) Inspection Forms: Contractor shall utilize the following inspection forms for reporting test data:
 - (1) NSWCCD Form 104-17-016, Mast Fairing Dimensional Straightness Measurement.
 - (2) NSWCCD Form 104-15-032, Auto Reflection for Piston Rod Brackets and Cylinder Bearings
 - (3) NSWCCD Form 104-17-029, Inner Mast Dimensional and Straightness Measurements
 - (4) NSWCCD Form 104-17-030, Mast Sigma Channel and Aft Internal Bearing Straightness
 - (5) NAVSHIPS 4646
 - (6) NAVSHIPS 4647
- i) Special Requirements identified in Delivery Orders.

4. Control of Government Furnished Material (GFM):

- a. Material received from NSWCCD Philadelphia will be received accompanied by NSWCCD Philadelphia Material Control Form 154-04-036.
- b. NSWCCD Philadelphia will be responsible for providing Material Control form with the material.
- c. Upon receipt of material, contractor will inventory material and return two (2) copies of the completed form to NSWCCD Philadelphia, Code 9633.
- d. Material traceability must be maintained at all times from material to the Material Control Form.
- e. Excess material or spoilage is to be returned to the government.
- f. Government-Furnished Equipment shall be returned in good and usable condition. If repairs are required, the cost of repairs shall be charged to the contractor.

- g. Special Requirements identified in Delivery Orders.
5. Mercury Exclusion Clause:
- a. Mercury Contamination: The supplies furnished under this contract shall contain no metallic or mercury compounds and shall be free from mercury contamination (i.e., during the manufacturing process, testing, or inspecting) i.a.w. NAVSEAINST 5100.3D. The supplies offered shall not have come in direct contact with mercury or any of its compounds nor with any mercury-containing device employing only a single boundary of containment. (A single boundary of containment is one, which is not backed by a seal or barrier.) Mercury contamination of the supplies will be cause for rejection of the material.
 - b. If there is reasonable cause to suspect the supplies of being contaminated by mercury, the following test may be used to determine whether contamination by metallic mercury exists: Enclose the equipment in a polyethylene bag or close-fitting airtight container and place in an oven at 135 degrees F +5 degrees F for one hour. Sample the trapped air and if mercury vapor concentration is 0.0 mg/cu meter or more, the material is mercury contaminated insofar as the requirements of this contract are concerned. Mercury vapor concentration can be determined with a mercury vapor detector such as a portable General Electric Vapor Detector (Catalog No. 8257557G-3), Bechman Instrument Model K-23, or other instruments that have equivalent range and capabilities. It should be noted that certain vapors such as benzene interfere with this type of mercury vapor detector and the detector should never be zero adjusted in any suspect atmosphere.
 - c. If the inclusion of metallic mercury or mercury compounds is required as a functional part of the material furnished under this contract, the contractor shall obtain written approval from NAVSEA before proceeding with manufacture. The contractor's request shall explain in detail the requirement for mercury, identify specifically the parts to contain mercury, and explain the method of protection against mercury escape. Such a request will be forwarded to the Government Inspector or Government Representative with a copy to NAVSEA.
 - d. If and to the extent that this contract calls for work to be performed by the contractor on a submarine, the contractor, in connection with such work, shall not bring into or utilize in the submarine any instrument or other device containing metallic mercury or mercury compounds, unless such equipment, instrument, or device has been approved by the Naval Sea Systems Command or authorized representative for use on a submarine.
 - e. The contractor is required to certify via a certificate of compliance that:
 - 1) The supplies furnished under this contract contain no metallic mercury or mercury compounds.
 - 2) The contractor has taken responsible steps to ensure that the supplies furnished under this contract are not contaminated with metallic mercury or mercury compounds.
 - f. The requirements of this clause shall be included in all subcontracts hereunder. Technical question pertaining to the requirements of this clause shall be referred to NAVSEA via the Government Inspection or Representative.